DETAILED ACTION

1. Applicants' amendment, filed on 08 December 2011, is acknowledged. Amended claims 1 and 12-13 have been entered. Accordingly, claims 1-32 are presently pending.

Allowable Subject Matter

2. Claims 14-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 14-15, the prior art, neither alone nor in combination with U.S. Patent No. 5,697,649 to Dames et al. renders obvious the combination of limitations found in claims 14-15, specifically wherein said limitations includes reference to a magnetic cylinder covered with a magnetizable flexible plate retained by demagnetization forces, bearing the cutting threads, which are electrochemically etched, including a base anvil cylinder, and no motivation is found to modify the combination of references cited infra to obtain said claimed limitation. To modify said references in such a manner as to obtain the claimed limitation would require the use of improper hindsight reasoning, as said references provide no suggestion of a need for the aforementioned limitations. Although U.S. Patent No. 6,533,325 to Steidinger (“Steidinger ‘325”) teaches a magnetic die cylinder, said die cylinder still lacks the requisite limitation concerning electrochemical etching. Furthermore, there would be no need to combine Steidinger '325 with the other prior art references cited infra absent the use of improper hindsight reasoning.

3. Claim 17 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 17, the prior art, neither alone nor in combination with U.S. Patent No. 5,697,649 to Dames et al. renders obvious the combination of limitations found in claim 17, specifically wherein said limitations includes the use of a set of bars for turning over a sheet disposed between two cutting units, and no motivation is found to modify combination of references cited infra to obtain said claimed limitation. To modify said references in such a manner as to obtain the claimed limitation would require the use of improper hindsight reasoning, as said references provide no suggestion of a need for the aforementioned limitation. Although Steidinger '325 teaches a turn bar apparatus, the use of Steidinger '325 in conjunction with the prior art references cited infra would require a modification which would not have been obvious to a person of ordinary skill in the art at the time of the invention, which is strongly indicative of the use of improper hindsight reasoning.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-9, 11-13, 16, 18, 20-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,697,649 to Dames et al. ("Dames") in view of U.S. Patent No. 4,860,963 to Goldhammer et al. ("Goldhammer").

Regarding claim 1, Dames discloses a method of manufacturing elements of relatively small size (see abstract, providing that the invention concerns the production of planchettes for use with security documents), comprising: i) unwinding a wound sheet (see col. 8, lines 10-12, providing that a film or web is fed from a roll to a printing press), then; ii) optionally, printing this sheet at least partly on at least one side and then (see col. 8, lines 14-16, providing that a film or web is passed between a print roller and an impression roller); iii) cutting deeply right through the sheet by cutting patterns (see col. 7, lines 15-19, providing that the sheet can be divided into a large number of planchettes by a die cutting operation); and iv) recovering the detached elements that form said elements of relatively small size are recovered (see col. 7, lines 20-22, providing that planchettes that were formed in the above referenced die cutting operation are introduced into security papers), but fails to disclose the cutting operation taking place by means of a succession of first and second synchronized cutting

cylinders each carrying at least one respective cutting thread that cuts one of the cutting patterns respectively, wherein the first cutting pattern constitutes a pattern that does not form a detached element, and wherein the first and second cutting patterns intersect so as to constitute a resulting pattern that forms a detached element constituting the element of relatively small size, said cutting cylinders being in succession along a conveying path of the sheet, at least one anvil cylinder being interposed between these cutting cylinders, the sheet passing between the first cutting cylinder and the at least one anvil cylinder so as to form the first cutting pattern, then between the second cutting cylinder and the at least one anvil cylinder so as to form the second cutting pattern that intersects the first cutting pattern.

Goldhammer teaches a cutting operation taking place by means of a succession of first and second synchronized cutting cylinders (left and right cutting rollers 12, respectively, shown in fig. 1, ) each carrying at least one respective cutting thread (teeth 21; note the presence of a plurality of teeth 21 extending axially from each of left and right cutting rollers 12, as shown in fig. 1, ) that cuts one of the cutting patterns respectively, wherein the first cutting pattern cuts deeply right through the sheet but does not form a detached element (see the arrangement shown in fig. 1,  ; note that per the arrangement shown, a tooth 21 associated with right cutting

roller 12 cuts “deeply right through” material 18, forming the lower edge of each particle 53, while a tooth 21 associated with the left cutting roller 12 subsequently cuts “deeply right through” material 18, forming the upper edge of each particle 53, and vice-versa in the formation of the next particle 53), and the second cutting pattern also cuts deeply right through the sheet (see the arrangement shown in fig. 1,  ; note that per the arrangement shown, a tooth 21 associated with right cutting roller 12 cuts “deeply right through” material 18, forming the lower edge of each particle 53, while a tooth 21 associated with the left cutting roller 12 subsequently cuts “deeply right through” material 18, forming the upper edge of each particle 53), and forms a detached element (particle 53, ) constituting the element of relatively small size (see the configuration shown in fig. 1,  ; note the relatively small size of particle 53,  in comparison to the whole of material 18), said cutting cylinders (left and right cutting rollers 12, respectively, shown in fig. 1, ) being in succession along a conveying path of the sheet (material 18) (see the configuration shown in fig. 1,  ; note that

left and right rollers 12, respectively, are placed together in a serial manner; note also that left and right rollers 12, respectively, are positioned along the conveying path of material 18, with material 18 in fact passing by each of left and right rollers 12), at least one anvil cylinder being interposed between these cutting cylinders (note that when a cut is made defining the bottom of a particle 53, left roller 12 may act as an anvil cylinder while right cylinder 12 acts as a cutting cylinder, and vice versa for the next particle 53 to be formed), the sheet (material 18) passing between the first cutting cylinder and the at least one anvil cylinder so as to form the first cutting pattern, then between the second cutting cylinder and the at least one anvil cylinder so as to form the second cutting pattern that intersects the first cutting pattern (as set forth above, note that when a cut is made defining the bottom of a particle 53, left roller 12 may act as an anvil cylinder while right cylinder 12 acts as a cutting cylinder, and vice versa for the next particle 53 to be formed).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to apply a Goldhammer cutting arrangement to the Dames assembly wherein the Goldhammer teeth 21 are formed in the shapes of any desired first and second cutting patterns, intersecting so as to constitute a desired resulting pattern (namely that of the aforementioned Dames planchettes), in order to provide an assembly that does not necessarily require the use of leading feed rollers, as explicitly taught by Goldhammer (see col. 2, line 8).

Regarding claim 2, Dames in view of Goldhammer discloses the method as claimed in claim 1, wherein the steps are carried out in line (see the combination set

forth in the rejection of claim 1, above, wherein a web is fed from a roll into a printing station, then into a cutting station, thereby separated, and then its generated planchettes are thereafter incorporated into a security document).

Regarding claim 3, Dames in view of Goldhammer discloses the method as claimed in claim 2, but fails to specifically disclose the method being carried out at a speed of between 20 and 150 m/min. However, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. It would have been obvious to a person of ordinary skill in the art at the time of the invention to select a moderate processing speed in order to achieve maximal possible production while maintaining a low error rate.

Regarding claim 4, Dames in view of Goldhammer discloses the method as claimed in claim 1, wherein said sheet is a sheet of paper, a sheet of nonwoven or a sheet of plastic, or a complex of these materials (see Dames col. 1, lines 22-23, providing that the generated planchettes may be formed form paper and/or plastic).

Regarding claim 5, Dames in view of Goldhammer discloses the method as claimed in claim 1, wherein the sheet is printed by flexography (see Dames col. 8, lines 11-13, providing that a flexographic multi-station printing press may be used).

Regarding claim 6, Dames in view of Goldhammer discloses the method as claimed in claim 1, wherein the sheet is printed, but fails to specifically disclose the sheet being printed in an amount of 1 to 10 g/m2 per side. However, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In the instant matter, it would

have been obvious to a person of ordinary skill in the art at the time of the invention to select a value between 1 and 10 g/m2 per size in order to ensure that the sheet is not unduly weighed down by printed indicia.

Regarding claim 7, Dames in view of Goldhammer discloses the method as claimed in claim 1, wherein the sheet is printed on only one side (see Dames claim 25, permitting the disposition of reflective metal material upon “at least one side”).

Regarding claim 8, Dames in view of Goldhammer discloses the method as claimed in claim 1, wherein the sheet is printed on both its sides in succession by front/back registration (see Dames claim 25, permitting the disposition of reflective metal material upon “at least one side”).

Regarding claim 9, Dames in view of Goldhammer discloses the method as claimed in claim 1, wherein said sheet has a thickness, but fails to specifically claim said thickness being between 5 and 110 micrometers. However, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In the instant matter, it would have been obvious to a person of ordinary skill in the art at the time of the invention to select a relatively small sheet thickness in order to eventually provide planchettes sufficiently thin to be incorporated into security documents without substantially altering the surface thickness of said security documents.

Regarding claim 11, Dames in view of Goldhammer discloses the manufacturing method as claimed in claim 1, but fails to specifically disclose the largest dimension of the detached element being between 0.5 and 6 mm. However, where the general

conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In the instant matter, it would have been obvious to a person of ordinary skill in the art at the time of the invention to select relatively small dimensions for an element in order to eventually provide planchettes sufficiently small to be easily incorporated into security documents without dominating the surfaces thereof.

Regarding claim 12, Dames, as modified by Goldhammer (in the manner set forth in the rejection of claim 1, above), discloses a method of cutting out elements of relatively small size (see Dames abstract, providing that the invention concerns the production of planchettes for use with security documents), comprising: i) providing a sheet (see Dames col. 8, lines 10-12, providing that a film or web is fed from a roll to a printing press); and ii) cutting deeply right through said sheet (see Dames col. 7, lines 15-19, providing that the sheet can be divided into a large number of planchettes by a die cutting operation) continuously, by a succession of at least first and second cutting patterns, wherein the first cutting pattern cuts deeply right through the sheet but does not form a detached element (see the combination set forth in the rejection of claim 1, above), and the second pattern also cuts deeply right through the sheet (see the combination set forth in the rejection of claim 1, above), and wherein the first and second cutting patterns intersect so as to constitute a resulting pattern that forms a detached element constituting the element of relatively small size (see the combination set forth in the rejection of claim 1, above, wherein Goldhammer cylinders are combined with the Dames apparatus), this cutting operation taking place using a succession of

synchronized first and second cutting cylinders (Goldhammer left and right cutting rollers 12, respectively, shown in fig. 1, ) each carrying at least one respective cutting thread (Goldhammer teeth 21; note the presence of a plurality of teeth 21 extending axially from each of left and right cutting rollers 12, as shown in fig. 1, ) that cuts one of the first and second cutting patterns respectively (see the combination set forth in the rejection of claim 1, above), said first and second cutting cylinders (Goldhammer left and right cutting rollers 12, respectively, shown in fig. 1, ) being in succession along a conveying path of the sheet (Goldhammer material 18) (see the configuration shown in Goldhammer fig. 1,  ; note that left and right rollers 12, respectively, are placed together in a serial manner; note also that left and right rollers 12, respectively, are positioned along the conveying path of material 18, with material 18 in fact passing by each of left and right rollers 12), at least one anvil cylinder being interposed between these cutting cylinders (note that when a cut is made defining the bottom of a particle 53, left roller 12 may act as an anvil cylinder while right cylinder 12 acts as a cutting cylinder, and vice versa for the next particle 53 to be formed), the sheet (material 18) passing between the first cutting cylinder and the at

least one anvil cylinder so as to form the first cutting pattern (as set forth above, note that when a cut is made defining the bottom of a particle 53, left roller 12 may act as an anvil cylinder while right cylinder 12 acts as a cutting cylinder, and vice versa for the next particle 53 to be formed), then between the second cutting cylinder and the at least one anvil cylinder so as to form the second cutting pattern that intersects the first cutting pattern (as set forth above, note that when a cut is made defining the bottom of a particle 53, left roller 12 may act as an anvil cylinder while right cylinder 12 acts as a cutting cylinder, and vice versa for the next particle 53 to be formed) so as to form the detached elements (particle 53, ) that constitute said elements of relatively small size (see the configuration shown in fig. 1,  ; note the relatively small size of particle 53,  in comparison to the whole of material 18).

Regarding claim 13, Dames, as modified by Goldhammer (in the manner set forth in the rejection of claim 1, above), discloses a device for cutting out elements of relatively small size, (see Dames abstract, providing that the invention concerns the production of planchettes for use with security documents), wherein it comprises: a rotary cutting device comprising a succession of synchronized first and second cutting cylinders (Goldhammer left and right cutting rollers 12, respectively, shown in fig. 1,

) having respective cutting threads (Goldhammer teeth 21; note the presence of a plurality of teeth 21 extending axially from each of left and right cutting rollers 12, as shown in fig. 1, ), said first and second cutting cylinders (Goldhammer left and right cutting rollers 12, respectively, shown in fig. 1, ) being in succession along a conveyance path of a sheet (Goldhammer material 18) to be cut (see the configuration shown in Goldhammer fig. 1,  ; note that left and right rollers 12, respectively, are placed together in a serial manner; note also that left and right rollers 12, respectively, are positioned along the conveying path of material 18, with material 18 in fact passing by each of left and right rollers 12), at least one anvil cylinder being interposed between these cutting cylinders (note that when a cut is made defining the bottom of a particle 53, left roller 12 may act as an anvil cylinder while right cylinder 12 acts as a cutting cylinder, and vice versa for the next particle 53 to be formed), the cutting threads on the cylinders being complementary so as to form at least first and second cutting patterns (see the combination set forth in the rejection of claim 1, above), wherein the first cutting pattern cuts deeply right through the sheet but does not

form a detached element (see the arrangement shown in fig. 1,  ; note that per the arrangement shown, a tooth 21 associated with right cutting roller 12 cuts “deeply right through” material 18, forming the lower edge of each particle 53, while a tooth 21 associated with the left cutting roller 12 subsequently cuts “deeply right through” material 18, forming the upper edge of each particle 53, and vice-versa in the formation of the next particle 53), and the second pattern also cuts deeply right through the sheet (see the arrangement shown in fig. 1,  ; note that per the arrangement shown, a tooth 21 associated with right cutting roller 12 cuts “deeply right through” material 18, forming the lower edge of each particle 53, while a tooth 21 associated with the left cutting roller 12 subsequently cuts “deeply right through” material 18, forming the upper edge of each particle 53, and vice-versa in the formation of the next particle 53), and wherein the first and second cutting patterns intersect so as to constitute a resulting pattern that forms a detached element from the sheet when the cutting cylinders rotate in a synchronized manner and when suitably adjusted, so that, when the sheet passes between the first cutting cylinder and the at least one anvil cylinder so as to from the first cutting pattern, then between the second cutting cylinder and the at least one anvil cylinder so as to form the second cutting pattern that intersects the first cutting pattern, the detached elements that constitute said elements of relatively small size are formed (see the combination set forth in the rejection of claim 1, above).

Regarding claim 16, Dames in view of Goldhammer discloses a device for manufacturing elements of relatively small size (see Dames abstract, providing that the invention concerns the production of planchettes for use with security documents), wherein it includes a reel holder (see Dames fig. 5, showing roll 147 being utilized in association with the apparatus; note that as such, the apparatus includes a roll or "reel" holder), a printing device, with at least one printing unit (see Dames col. 8, lines 14-16, providing that a film or web is passed between a print roller and an impression roller), and a cutting device as claimed in claim 13 (see the combination set forth in the rejection of claim 1, above).

Regarding claim 18, Dames in view of Goldhammer discloses the device as claimed in claim 16, wherein it includes a printing unit (see Dames col. 8, lines 14-16, providing that a film or web is passed between a print roller and an impression roller) having at least two printing units (Dames print roller and impression roller) with a device for reversing the rotation of one of the printing units (motorized feeds within printers).

Regarding claim 20, Dames in view of Goldhammer discloses the manufacturing device as claimed in claim 16, wherein it includes an antistatic treatment device (note that each metallic component of the device functions as an "antistatic treatment device," as it functions to discharge any accumulated static electricity).

Regarding claim 21, Dames in view of Goldhammer discloses a security element of relatively small size (see Dames abstract, providing that the invention concerns the production of planchettes for use with security documents), wherein it is obtained using the manufacturing method of claim 1 (see the combination set forth in the rejection of

claim 1, above) and it includes identification patterns (Dames indicia 20) observable to the naked eye (see Dames fig. 4).

Regarding claim 22, Dames in view of Goldhammer discloses the security element as claimed in claim 21, wherein it includes patterns (Dames indicia 20) chosen from patterns visible in natural light, patterns visible under UV light, luminescent patterns, fluorescent patterns, phosphorescent patterns, patterns detectable by near infrared radiation, patterns detectable by intermediate infrared radiation, thermochromatic patterns, piezochromatic patterns, patterns based on DNA tracers, patters that are optically variable, iridescent patterns, patterns based on liquid crystals, patterns based on diffraction gratings, moire patterns, holograms, electromagnetic patterns, and combinations thereof (see Dames fig. 1, showing a pattern of indicia that is visible).

Regarding claim 23, Dames in view of Goldhammer disclsoes the security element as claimed in claim 21, wherein it includes, beneath or alongside said patterns, printing of electromagnetic character (see Dames col. 1, lines 37-43, providing that planchettes could be provided with special magnetic properties such as discontinuities in the magnetic material or coded variations in the magnetization of the material).

Regarding claim 24, Dames in view of Goldhammer discloses the security element as claimed in claim 21, wherein it includes chemical authentication reactants or reactants that reveal a specific event (see Dames col. 6, lines 11-19, providing that demetallization may be accomplished via chemical etching).

Regarding claim 25, Dames in view of Goldhammer discloses a security element of relatively small size (see Dames abstract, providing that the invention concerns the production of planchettes for use with security documents), wherein it is obtained using the manufacturing method of claim 1 (see the combination set forth in the rejection of claim 1, above), and wherein the shape of said element is a security characteristic (see Dames col. 5, lines 43-50, providing that the shape of the security element may determine the magnetic response through the influence of shape-determined permeability effects).

Regarding claim 26, Dames in view of Goldhammer discloses a security sheet comprising a fibrous substrate (see Dames col. 7, lines 26-30, providing that the sheet may be formed from paper) which includes at least one security element of relatively small size (see Dames abstract, providing that the invention concerns the production of planchettes for use with security documents) obtained using the manufacturing method of claim 1 (see the combination set forth in the rejection of claim 1, above).

Regarding claim 27, Dames in view of Goldhammer discloses a decorative sheet comprising a fibrous substrate (see Dames col. 7, lines 26-30, providing that the sheet may be formed from paper), which includes at least one decorative element of relatively small size (see Dames abstract, providing that the invention concerns the production of planchettes for use with security documents) obtained using the manufacturing method of claim 1 (see the combination set forth in the rejection of claim 1, above).

Regarding claim 28, Dames in view of Goldhammer discloses a security document comprising, as base, a sheet as claimed in claim 26 (see Dames col. 7, lines 26-30, providing that the sheet may be formed from paper).

Regarding claim 29, Dames in view of Goldhammer discloses a package comprising a sheet as claimed in claim 26 (see Dames col. 7, lines 26-30, providing that the sheet may be formed from paper).

Regarding claim 30, Dames in view of Goldhammer discloses a security element as claimed in claim 21, wherein the shape of said element is a security characteristic (see Dames col. 5, lines 43-50, providing that the shape of the security element may determine the magnetic response through the influence of shape-determined permeability effects).

Regarding claim 31, Dames in view of Goldhammer discloses a security sheet comprising a fibrous substrate (see Dames col. 7, lines 26-30, providing that the sheet may be formed from paper) which includes at least one security element as claimed in claim 21 (see the configuration set forth in the rejection of claim 21, above).

Regarding claim 32, Dames in view of Goldhammer discloses the method as claimed in claim 1, wherein a single anvil is interposed between the first and second cutting cylinders (see the combination set forth in the rejection of claim 1, above; note that within each individual cutting operation, only one of the Goldhammer cylinders functions as an anvil).

7. Claims 10 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dames in view of Goldhammer and further in view of U.S. Patent No. 6,350,342 to Steidinger et al. ("Steidinger").

Regarding claim 10, Dames in view of Goldhammer discloses the method as claimed in claim 1, but fails to disclose the detached elements being recovered by stripping.

Steidinger '342 teaches the concept of detached elements being recovered by stripping (see col. 5, lines 64-66, providing that subsequent to a die cutting process, portions of a web may be separated by way of a peel bar or roller).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the Steidinger '342 peel bar/roller into the apparatus of Dames in view of Goldhammer in order to provide a means of ensuring the physical separation of the die cut planchettes from the web from which they originate, as taught by Steidinger '342 (see col. 5, lines 64-66).

Regarding claim 19, Dames in view of Goldhammer, as modified by Steidinger '342 (in the manner set forth in the rejection of claim 10, above), discloses the manufacturing device as claimed in claim 16, wherein it includes, after the cutting device, a stripping device (see the combination set forth in the rejection of claim 10, above, wherein the Steidlinger '342 peel bar/roller is incorporated into the apparatus of Dames in view of Jungbeck).

Response to Arguments

8. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUSTIN LEWIS whose telephone number is (571)270-5052. The examiner can normally be reached on M-F 7:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dana Ross can be reached on (571) 272-4480. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JVL/

/Edward Tolan/
Primary Examiner, Art Unit 3725